REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections contained in the Office Action of June 25, 2004 is respectfully requested.

In the Office Action, claims 87-89 and 91-94 were rejected as being anticipated by Gunton. However, these rejections have been rendered moot by the above cancellation of these claims. This should not be taken as acquiescence to the positions raised by the Examiner, but merely as an expedient toward obtaining the allowance of the present application.

In section 4 on page 2 of the Office Action, the Examiner rejected claims 90 and 95-110 as being anticipated Reyman. By the above amendments, claims 90, 95-98, 100, 101, 106 and 110 have been canceled. Rejection of these claims thus has been rendered moot. Further, each of claims 99, 102, 105 and 107 has been amended to be in independent form so as to clearly distinguish over Reyman.

Figure 4 illustrates a utility supply control system for a point of use, and is described beginning at line 16 of page 13 of the specification.

A gas supply shut-valve 10 is operable to shutoff the gas supply to a point of use, such as a dwelling 26, in response to a valve shut-off signal. An automatic meter reading device 33 is also provided to automatically determine the gas usage with a gas meter 11. A control module 25 is operably interconnected with the gas supply shutoff valve by a wire 24 or by radio frequency, and the automatic meter reading device through a wire 33a or by radio frequency. The control is operable to send a valve shut-off signal to the gas supply shutoff valve and to receive gas usage information from the automatic meter reading device.

According to a further aspect of this arrangement, a fuel cell 31 is operable to provide electric power from gas flowing through gas pipes 19. The fuel cell is connected with at least one of the gas supply shutoff valve, the automatic reading device and the control to supply electrical power thereto. According to the arrangement illustrated in Fig. 4, it can power each of the valve 10, control module 25 and the AMR device 33. As discussed on page 14 of the specification, the use of the fuel cell allows for a more reliable source of power in a system that depends upon the use of batteries. The

fuel cell, further, can also be used to operate the AMR device 33 and various communication links that are used in the system.

In the rejection, the Examiner cited Reyman as having a fuel cell 42. However, what Reyman illustrates is not a fuel cell, but a battery, as is clear from Fig. 1 and the discussion in column 3. This battery of Reyman suffers from the same problem as discussed in the present specification; that is, the use of a battery is a less reliable source of power. Further, it is not a fuel cell a that term is ordinary used. This distinction is emphasized in claim 99, as the claim recites "a fuel cell mounted in gas plumbing of the point of use operable to generate electrical power from gas in the gas plumbing." Clearly the battery supply 42 of Reyman is not operable to generate electrical power from gas in the gas plumbing. Please also see the attached definition of "fuel cell".

As such, it is clear that the arrangement of claim 99 is not only not anticipated by Reyman, but the arrangement including the fuel cell provides clear benefits and advantages above and beyond what is disclosed and suggested by Reyman. Accordingly, it is respectfully submitted that claim 99 clearly distinguishes over Reyman, and indication of such is requested.

Claim 102 recites that the control comprises a seismic sensor and is operable to compare a gas flow rate per unit of time before the seismic sensor detects an earthquake to a gas flow rate per unit of time after the seismic sensor has detected the earthquake and to send the valve shutoff signal to the gas supply shutoff if the flow rate has increased after the earthquake. Claim 102 further recites that the control has information of the gas flow rates of appliances of the point of use, and sends the valve shutoff signal to the gas supply shutoff valve after the earthquake only if the increase in the flow rate does **not** correspond to the gas flow rates of appliances of the point of use. In this way, the system of claim 102 can avoid a false trigger of the valve after an earthquake because the system is not only aware of gas flow rates in existence prior to the earthquake, but is also aware of the ordinary gas flow rates of appliances of the point of use, so that an incorrect triggering of the valve will not occur due to simple use of the appliances at the point of use. Note for example the discussion beginning at line 25 of page 13 of the specification and continuing to line 11 of page 14 of the specification.

In the Office Action, the Examiner stated that in Reyman "The automatic meter reading device 28 sends signal to both shutoff valve 20 after a seismic event via 26 and an excessive flow rate (column 5, line 7+)." However, Reyman does not anticipate or suggest the system of claim 102.

While the cited section in column 5 of Reyman does discuss a requirement that a trigger signal be generated when the vibration sensor 26 generates a vibration signal above the predetermined vibration threshold level, and when the flow rate of gas as measured by the gas flow meter 28 is above a predetermined threshold level as well, there is no discussion or suggestion of the gas flow threshold level corresponding to the gas flow rates of appliances of the point of use. As such, the present invention as represented by the claim 102 clearly distinguishes over Reyman for this reason as well. Indication of such is respectfully requested.

Turning again to page 14 of the specification, beginning at line 12 is a discussion of the pressure sensor 34 that may be incorporated as part of the valve 10. The pressure sensor 34 is designed to detect pressure in the gas system and to activate the valve if the pressure becomes abnormal. The pressure information can be sent to the control module, for example, and can activate the flow when the pressure changes indicate an excess flow or an abnormal condition. The excess flow or the abnormal condition will be assumed to indicate a leak in the system, and the valve will then be shutoff. The advantage of the pressure sensor 34 is that the gas will be shutoff when it is most likely that there is a gas leak, as opposed to simply shutting off the gas when the ground moves. In other words, the sensor 34 can be used in conjunction with the seismic sensors for a more precise determination of whether there is a need to shut off the gas.

Claim 105 reflects this feature by reciting, in addition to the gas supply shutoff valve, the automatic meter reading device and the control operable interconnected with both, a pressure sensor incorporated with the gas supply shutoff valve and in communication with the control, wherein the pressure sensor is operable to shut off the gas supply shutoff valve upon detection of an abnormal gas pressure.

The Examiner took the position that a pressure sensor is a standard utility supply system element, and deemed that it was not necessary to cite a reference. This position by the Examiner is respectfully traversed. Accordingly, the Examiner is requested to cite prior art evidencing not only

the fact that a pressure sensor is a standard utility supply system element, but that it would at least be obvious to one of ordinary skill in the art to incorporate such a pressure sensor with a gas supply shutoff valve, and in communication with the control that is operably interconnected with the gas supply shutoff valve, and that the pressure sensor is operable to shut off the gas supply shutoff valve upon detection of abnormal gas pressure.

Claim 107 is directed to a utility supply control system including not only the gas supply shutoff valve, an automatic meter reading device and a control that is operably interconnected with the gas supply shutoff valve and the automatic meter reading device, but also an electric interface device. The control is operable to send an electricity shut off signal, and the electric interface device is operable to shut off the electricity to the point of use in response to the electricity shut off signal. Thus claim 107 is amended and corresponds to general to prior claim 110.

In rejecting claim 110, the Examiner again cited Reyman. However, the Examiner gave no indication of how Reyman anticipated this aspect of the present invention.

It is noted that Fig. 5 schematically illustrates the incorporation of the electric interface device. Discussion of the interface device begins at line 5 at page 15 of the specification. As discussed at line 12, the interface device includes a built in shut-off feature which can be activated by a signal from the control module 25 through a power/communication cable 36. This could alternatively be an RF communication link. While the electric interface device can be used as a power source for operation of the system, advantageously it could also incorporate a built-in way of shutting off the electricity to the point of use. Details of an electricity shut-off arrangement are provided in the specification beginning with Fig. 20.

As can be seen from Fig. 1, the system of Reyman is powered using AC power 41 backed-up by battery supply 42. However, there is no electric interface device operable to shut off the electricity to the point of use in Reyman in response to an electricity shut off signal. Reyman appears to be solely concerned with gas flow. As such, claim 107 clearly distinguishes over Reyman, and indication of such is respectfully requested.

In view of the above, it is respectfully submitted that all claims now pending in the present application clearly patentably distinguish over Reyman, as well as the additional prior art references cited by the Examiner. Indication of such is respectfully requested.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

Respectfully submitted,

James MCGILL

By: _____

Nils E. Pedersen
Registration No. 33,145
Attorney for Applicant

NEP/kjf
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
December 27, 2004

fuel cell

n.

An electrochemical cell in which the energy of a reaction between a fuel, such as liquid hydrogen, and an oxidant, such as liquid oxygen, is converted directly and continuously into electrical energy.